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10/527,603	03/27/2006	Jonathan Michael Blackburn	27353-510-059	9992

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MINTZ LEVIN COHN FERRIS GLOVSKY & POPEO
ATTN: PATENT INTAKE CUSTOMER NO. 35437
ONE FINANCIAL CENTER
BOSTON, MA 02111

EXAMINER

LIU, SUE XU

ART UNIT	PAPER NUMBER
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1639

MAIL DATE	DELIVERY MODE
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05/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,603	Applicant(s) BLACKBURN ET AL.	
	Examiner SUE LIU	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-72 is/are pending in the application.
- 4a) Of the above claim(s) 50-52 and 54-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-49 and 53 is/are rejected.
- 7) ☒ Claim(s) 53 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/15/08 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Status

1. Claims 1-36 have been cancelled 3/15/05.
Claims 37-72 are currently pending.
Claims 50-52 and 54-72 have been withdrawn.
Claims 37-49 and 53 are being examined in this application.

Election/Restrictions

2. Applicant's election **without** traverse of Group 1 (claims 37-49 and 53) in the reply filed on 1/30/08 is acknowledged.
3. Claims 50-52 and 54-72 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/30/08.

Priority

4. This application is filed under 35 U.S.C 371 of PCT/IB03/05258 (filed on 9/16/2003), which claims priority to US provisional application 60/410,815 (filed on 9/16/02).
5. The instant application also appears to claim priority benefit to a prior US application, 10/313,963 (filed 12/5/02).

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) as follows:

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 10/313,963, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application. The '963 application does not appear to provide support for the instant claims in their full scope. For example, The instant claim recites the P450 proteins can be selected from "COPIA2" (the instant claim 48), which does not have support in the '963 application.

Thus, the said subject matter does not obtain benefit of the earlier priority date of the '963 application.

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers (for PCT/GB02/05499) have been placed of record in the file.

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7. It is recommended that applicants submit an ADS clearly list the claimed priority application and their corresponding relationship to the instant application. See MPEP 601.05.

Information Disclosure Statement

8. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Oath/Declaration

9. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). (see p.4 of the Oath/Declaration filed on 3/27/06).

Drawings

10. The drawings/figures are objected to because tables and sequence listings included in the specification must not be duplicated in the drawings. See 37 C.F.R. §1.58(a) and §1.83. Applicants are advised that upon issuance of a patent, the complete text of the sequence listing

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submitted in compliance with 37 C.F.R. §§1.821-1.825 will be published as part of the patent. Applicants should amend the specification to delete any Figures which consist only of nucleic acid or protein sequences which have been submitted in their entirety in computer readable format (i.e. as SEQ ID NO:'s) and should further amend the specification accordingly to reflect the replacement of the Figure by the appropriate SEQ ID NO:.

Appropriate correction is required.

Specification

Sequence Rule Compliance

11. “In order to expedite the processing of applications, minor errors pertaining to compliance with the sequence rules may be handled with the first Office action.” See MPEP 2427.01.

The instant disclosure recites lists of sequences in the specification (e.g. see p. 33, etc.), which sequences are not identified by their corresponding SEQ ID Nos. Applicants are requested to amend the instant specification and/or claims accordingly.

12. The disclosure is objected to because of the following informalities: The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. See, for example, p.26.

Appropriate correction is required

13. Applicants are also invited to update the continuing data (benefits claimed under 35 USC 119, 120, etc.) in the first line of the specification.

14. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. MPEP 608.01.

Claim Objections

15. Claim 53 is objected to because the said claim depends on a non-elected claim (Claim 50) that is drawn to a non-elected invention. Appropriate correction is requested.

Claim Rejections - 35 USC § 112

16. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

New Matter Rejection

17. Claim 48 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claim 48 has been added as part of a claim amendment filed on 3/15/05. However, the instant specification does not provide support for the claimed protein of "COPIA2" as recited in Claim 48.

If Applicant believes this rejection is in error, applicant must disclose where in the specification support for the entire scope of the amendment(s) and/or new claims can be found. As a result, Claim 48 represents new matter.

Second paragraph of 35 U.S.C. 112

18. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

19. Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 47 recites the terms "Phase 1 drug" and "Phase 2 drug" metabolizing enzymes, which are unclear and render the claim indefinite. The instant specification does not specifically define the term Phase 1 drug or phase 2 drug metabolizing enzymes such as defining a common core structure and/or function for the said categories of enzymes. Thus, one of ordinary skill in the art would not be able to apprise the metes and bounds of the instant claimed invention.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

MacBeath

21. Claims 37-39 are rejected under **35 U.S.C. 102(b)** as being anticipated by MacBeath et al (Science. Vol. 289: 1760-1763; 9/2000).

The instant claims recite “a protein array comprising a surface having a plurality of spatially defined locations wherein at each location there are deposited at least two protein moieties which are capable of forming a complex characterized in that said complex is transiently formed.”

MacBeath et al, throughout the publication, teach making protein microarrays (e.g. Abstract), which read on the protein array of **clm 37**. The reference teaches attaching proteins to different spots on glass slides (e.g. p.1760, right col.; Figure 1), which read on the spatially defined locations of **clm 37**. Each of the spots on the slides of the reference comprises at least one protein moieties. The instant specification does not specifically define the term “location”,

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which can be any portion of the microarray. For example, two spots of the protein array together can read on “a location”, which are “spatially defined locations”. The reference also teaches at least two proteins such as “protein G” or “p50” protein are immobilized on the array (e.g. Figure 1; p.1761). The reference also teaches attaching various kinases onto the protein array (e.g. Figure 3; p.1762). The recitation of “which are capable of forming a complex characterized in that said complex is transiently formed” of **clm 37** is defining the claimed proteins in terms of their functions or inherent properties. Any protein is “capable of forming a transient complex” without evidence to the contrary. For example, a protein can be capable of forming a “transient complex” to its antibody, or to its binding proteins, or to a binding nucleic acid. Further, the kinases of the MacBeath reference is capable of forming a “transient complex” with its substrate for catalysis, which read on the functional language of **clm 38**.

The instant claim 39 recites “said protein moieties at each location act sequentially on a substrate of interest”, which can be broadly interpreted to mean any “action” on any substrate. For example, contacting “a substrate” with a protein, and then contacting the substrate with another protein reasonably fall within the said functional language of the instant **clm 39**. Thus, the proteins of the reference’s teaching read on the instant **clm 39**.

The proteins of the MacBeath reference appear to be structurally the same as the proteins of the instant claims.

6,808,938

22. Claims 37-43, 46-48 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Hämäläinen et al. (US Patent 6,808,938 B2; filed 8/3/2001; or earlier priority date, 6/18/1999).

Hämäläinen et al, throughout the patent, teach biosensor having surface-bound biomolecules (such as proteins; e.g. Abstract). The biosensor comprises a plurality of discrete sensing surfaces, which read on the surface of **clm 37**. The reference also teaches the immobilized biomolecules are proteins/enzymes such as “at least two different... CYP 450 enzymes” (see e.g. col. 9, lines 17+; col.10, lines 60+), which read on the protein moieties of **clm 37-39**. As discussed above, the functional or inherent property limitations of “capable of forming a complex”, “transiently formed”, and “sequentially acting” are broad and encompassing any “complex” formation (such as protein-protein interaction, protein-ligand interactions, etc.) as well as any “act” (including binding). Thus, the reference’s teachings inherently read on the functional limitation of the instant claims. The reference also teaches immobilizing variants of the P450 proteins such as “CYP1A1, CYP1A2, CYP2A1, 2A2, 2A3... CYP2B1, 2B2, 2B3...” (e.g. col. 10, ll 60+). The various P450 proteins are membrane proteins as well as drug metabolizing enzymes (as evidenced by the instant specification, p.6, lines 11+; p.2). Thus, the reference inherently teaches the claimed inherent properties recited in **clms 40-42** as well as the P450 protein of **clms 43** and **46**. The array of the reference’s teaching also read on the array of **clm 53**.

Because the claim language of the instant **clm 47** is not indefinite as discussed supra, the enzymes encompassed by **clm 47** is construed to mean any drug metabolizing enzymes. The reference teaches various metabolic enzymes (e.g. cols.10-11), which read on the phase 1 and 2 drug metabolizing enzymes of **clm 47**.

The reference also teaches CYP2B6 protein, for example (e.g. cols.10-11), which reads on the CYP2B6 protein of **clm 48**.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Blackburn and Others

25. Claims 37-49 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Blackburn** et al (WO 01/57198; 8/9/2001), in view of **Boxer** et al (US 6,228,326; 5/8/2001), **Gut** et al (Journal of Biological Chemistry. Vol. 257(12): 7030-7036; 1982) and **Tanaka** (Journal of Clinical Pharmacy and Therapeutics. Vol. 24: 323-329; 1999).

Blackburn et al, throughout the publication, teach various protein arrays with various attached proteins (e.g. Abstract). The reference teaches protein arrays with spatial defined positions (e.g. p.3, lines 20+), which read on the spatially defined locations on the surface of **clms 37, 39, 42 and 53**. Each of the position on the slides of the reference comprises at least one protein moieties. The instant specification does not specifically define the term “location”, which can be any portion of the microarray. For example, two positions of the protein array together can read on “a location”, which are “spatially defined locations”. The reference also teaches

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attaching P450 proteins to the protein array to generate a P450 chip (e.g. p.8, lines 15+), which the P450 enzymes read on the proteins of **clms 37-43** and **53**. As discussed above, the functional or inherent property limitations of “capable of forming a complex”, “transiently formed”, and “sequentially acting” are broad and encompassing any “complex” formation (such as protein-protein interaction, protein-ligand interactions, etc.) as well as any “act” (including binding). Thus, the reference’s teachings inherently read on the functional limitation of the instant claims. The various P450 proteins are membrane proteins as well as drug metabolizing enzymes (as evidenced by the instant specification, p.6, lines 11+; p.2). Thus, the reference inherently teaches the claimed inherent properties of the instant claims. The P450 enzymes of the reference also read on the P450 enzymes of **clm 46**.

The reference also teaches using “tags” or “markers” to attach the protein moieties to the protein chip (e.g. pp.3-4), which reads on the maker moiety of **clm 44**.

Because the claim language of the instant **clm 47** is not indefinite as discussed supra, the enzymes encompassed by **clm 47** is construed to mean any drug metabolizing enzymes. The reference teaches various metabolic enzymes such as P450 (e.g. p.8) and glutathione S-transferase (e.g. p.35), which the different enzymes read on the phase 1 and 2 drug metabolizing enzymes of **clm 47**. Although the reference does not explicitly teach the various proteins such as P450 enzymes and the GST enzymes are arranged on one protein array, it would have been prima facie obvious for one of ordinary skill in the art at the time of the invention to attach various proteins (such as metabolic proteins) on one protein array for various experimental applications. It would have been obvious to one skilled in the art to substitute one protein for

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another or to add another protein onto a protein array to fit various experimental design and to achieve the predictable result of making a protein array with the desired proteins attached.

Blackburn et al do not explicitly teach the protein moieties are incorporated into a liposome as recited in **clm 45**. The Blackburn reference also does not explicitly teach the P450 proteins are human proteins, and the drug metabolizing proteins are derived from different mutant versions as recited in **clms 48 and 49**.

However, **Boxer** et al, throughout the publication, teach various arrays comprising lipid bilayer containing “receptors or biomolecules” (e.g. Abstract). The reference teaches a plurality of bilayer on an addressable substrate (e.g. col.4, lines 10+). The reference also teaches liposomes with incorporated membrane proteins (e.g. cols.18-19, lines 64+). The reference also teaches the need to generate protein arrays with liposomes including more efficient screening assays using integral membrane proteins.

In addition, **Gut** et al, throughout the publication, teaches reconstituting P450 enzymes and NADPH-cytochrome P450 reductase in vitro using lipid vesicles (e.g. Abstract). The reference also teaches the need to study the interaction between the two types of enzymes in the membrane integrated form so that their metabolic properties can be studied. (e.g. pp.7030-7031).

Further, **Tanaka** teaches various isoenzymes or protein mutants of the p450 proteins (e.g. Abstract; Table 1). The reference teaches the different allelic variants of p450 enzymes (such as human CYP2D6) can lead to truncated and inactive proteins that are defective in drug metabolism (e.g. Abstract; p.324, col.1, para 4; Table 1). The reference also teaches the need to study these polymorphic enzymes to determine appropriate dosage of drugs when treating patients. (e.g. Abstract).

Therefore, it would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to generate protein array comprising liposomes (or lipid vesicles) with integrated metabolic proteins (or enzymes), as well as to immobilize protein mutants (or allelic variants) of P450 for various applications.

A person of ordinary skill in the art would have been motivated at the time of the invention to immobilize protein containing liposomes (such as P450 integrated liposomes) to protein arrays, because array with protein containing liposomes and drug metabolizing protein containing vesicles are all known and routine in the art. In addition, the Boxer reference teaches the need to making liposome containing array, and the Gut references teaches the need to generate drug metabolizing enzyme containing liposome. Thus, using the known technique to immobilize metabolic enzyme containing liposomes onto protein arrays to provide an improved protein arrays for various screening assays would have been obvious to one of ordinary skill.

A person of ordinary skill in the art would have been motivated at the time of the invention to attach various P450 proteins and their allelic variants (or mutants) onto a protein array, because Tanaka teaches the need to study the interactions between various drugs and P450 allelic variants for designing appropriate therapeutic dosage for the different protein mutants. It would have been *prima facie* obvious for one of ordinary skill in the art to substitute one type of proteins with other proteins (P450 protein allelic variants or mutants) on a protein array to achieve the predictable results of making a protein array that is useful for assaying drug metabolisms or other properties.

A person of ordinary skill in the art would have reasonable expectation of success of achieving such modifications all of the cited references have demonstrated the success of generating various protein arrays and various protein containing vesicles.

Double Patenting

26. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

‘963

27. Claims 37, 39 and 53 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 6, 8 and 9 of copending Application No. 10/313,963 (hereinafter referred to as the ‘963 application; PGPUB 20040002078).

The ‘963 application claims the following in claim 1:

“A protein array comprising a surface upon which are deposited at spatially defined locations at least two protein moieties wherein said moieties are phenotypically related protein variants which are encoded by naturally occurring variants or alternatively-spliced transcripts of a DNA sequence of interest wherein said variants map to the same chromosomal locus.

The ‘963 application also claims drug metabolizing enzymes as well as P450 enzymes on the protein array as recited in claims 6, 8 and 9.

Thus, the claimed invention of the ‘963 application read on the instant claimed invention of a protein array comprising drug metabolizing enzymes.

This is a provisional obviousness-type double patenting rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Liu whose telephone number is 571-272-5539. The examiner can normally be reached on M-F 9am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, James (Doug) Schultz can be reached at 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sue Liu/
Patent Examiner, AU 1639
4/30/08